



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,458	06/14/2006	Nobuaki Ogawa	36856.1459	6900

54066 7590 01/22/2010  
MURATA MANUFACTURING COMPANY, LTD.  
C/O KEATING & BENNETT, LLP  
1800 Alexander Bell Drive  
SUITE 200  
Reston, VA 20191

EXAMINER
----------

PATEL, ISHWARBHAI B

ART UNIT	PAPER NUMBER
----------	--------------

2841

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

01/22/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

JKEATING@KBIPLAW.COM  
uspto@kbiplaw.com  
cbennett@kbiplaw.com

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/596,458	OGAWA, NOBUAKI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ishwarbhai B. Patel	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) 18-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-17 and 26-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. This action is in response to amendment filed on November 5, 2009.

***Specification***

2. The disclosure is objected to because of the following informalities: Reference numerals for wiring patterns and ceramic substrate are not correct, page 9, line 2 and 5.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2841

5. Claims 15-17 and 26-28 rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takehara (US Patent No. 6,815,810)..

Regarding claim 15, Tamura in figure 3 discloses a composite ceramic substrate comprising: a ceramic substrate (12) including a surface-mounted component mounted thereon (13, 14); at least one wiring pattern disposed in the ceramic substrate (not explicitly shown in figure but electrode 26 is connection to the component through the internal wiring, therefore, it would have been obvious to construe the internal wiring pattern); at least one external terminal electrode (16) connecting the at least one wiring pattern to a surface electrode of a motherboard (21); at least one convex leg portion (25) made of resin (paragraph 0007) and arranged on the ceramic substrate such that a first end surface of the at least one convex leg portion supports the at least one external terminal electrode (see figure) and a via-hole conductor (27) provided in the at least one convex leg portion (see figure) and connecting the at least one external terminal electrode to the at least one wiring pattern (see figure); a second end surface of the at least one convex leg portion opposite to the first end surface is in direct contact with and directly connected to the ceramic substrate (portion of the leg portion beyond electrode 26 is connected to the ceramic substrate, see figure. In not Takehara in figure 1 discloses a structure with substrate 2 formed of low temperature co-fired ceramic laminate (column 6, line 9-17) with via hole conductor (12) in the bottom resin layer

Art Unit: 2841

formed of conductive resin (column 5, line 40-50). The resin layer in contact with the ceramic substrate will have better adhesive strength.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to provide the structure of Tamura with a second end surface of the at least one convex leg portion opposite to the first end surface is in direct contact with and directly connected to the ceramic substrate, as taught by Takehara, in order to have better adhesive strength.

Regarding claim 16, the modified board of Tamura further discloses the surface-mounted component (13, 14) is mounted on at least one of a first main surface and a second main surface of the ceramic substrate (see figure) and the convex leg portion (25) is disposed on the second main surface of the ceramic substrate (see figure).

Regarding claim 17, the modified board of Tamura further discloses the convex leg portion is disposed at a periphery of the second main surface of the ceramic substrate (see figure).

Regarding claim 28, the modified board of Tamura does not explicitly disclose the surface-mounted component includes an array of external terminal electrodes, is obvious to provide such component, as surface-mounted component with an array of external terminal electrodes, is old known in the art.

Art Unit: 2841

Regarding claim 26, the modified board of Tamura discloses all the features of the claimed invention as applied to claim 15 above including the via hole conductor, but does not explicitly disclose the via-hole conductor is made of a flexible conductive resin.

However, via hole filled with paste made of conductive resin is old and known in the art.

Takehara in figure 1 discloses a structure with substrate 2 formed of low temperature co-fired ceramic laminate (column 6, line 9-17) with via hole conductor (12) in the bottom resin layer formed of conductive resin (column 5, line 40-50).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to provide the modified board of Tamura with the via hole conductor made of flexible conductor to have desired conductivity.

Regarding claim 27, the modified board of Tamura further discloses the substrate to be a multilayer ceramic substrate including a plurality of laminated low temperature co-fired ceramic layers as applied to claim 26 above.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwarbhai B. Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jinhee Lee can be reached on (571) 272 1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ibp  
January 18, 2010

/Ishwarbhai B Patel/  
Primary Examiner, Art Unit 2841